

W6IFE San Bernadino Microwave Society NewsLetter

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The 3 **April 1997** meeting will have Dick, K6HIJ talking about stealth and related things. SBMS meets at the American Legion Hall 1024 Main Street Corona CA at 1930 hours local time. The April meeting will have the election of 1997-98 officers.

Last meeting- Dick, K6HIJ presented a narrative on the development of microwave hardware from WW2 through the present. Thanks Dick. Nominated for office in the 1997-98 period were: President, Chip N6CA, and John WA6BFH; Vice President, Chuck WA6EXV and Joe WA6PAZ; Treasurer, Dick K6HIJ; Recording Sec, Dave K6OW; Corresponding Sec, Phil K6COY and Ed W6OYJ; Newsletter Ed, Bill WA6QYR. Visitors were Frank West, KE6VHM and wife Linda of Woodcrest, Alvin Banman WN6EKZ of Pomona, Ken Hendrickson, N8KH of LA, and Mike Bridges, AC6SX of San Dimas. Welcome ALL.

Scheduling

19 Apr. 24 Ghz noon time SBMS event

1 May tech talk TBD

10 May 1296 & 2304 Mhz ARRL Spring Sprints

5 June tech talk TBD

14-16 Jun. ARRL June VHF QSO Party

28-29 Jun. ARRL Field Day

Wants and Gots for Sale

Wanted- schematic for Collins KWM2 Lloyd AB6SM 562-921-5217 days

Wanted- 24 Ghz waveguide Bob W6SYA 818-248-3683

Wanted- 150-180 mm "C" mount lens or for loan of -Chuck WA6EXV 760-377-4972

Wanted IF unit HP8552A/B for HP141T Doug K6JEY 310-424-3737

For Sale- AIL 707 spectrum analyzer-swept YIG front end digital display \$500 Doug see above.

For Sale Kenwood TH-21AT 2mtr HT, wall charger, DC-21 mobile converter \$80 Bill WA6QYR 760-375-8566

Unusual propagation noted through San Diego X-Band Repeater--Last night (Mon. 3/3) we observed very strong signals from the Palos Verdes and Frazier beacons coming through the San Diego X-Band repeater. Typically these signals reach only a few dB above the noise and never move the S meter. At around 7:30 PM the Palos Verdes signal hit the S9 mark on my receiver for a few minutes. The same thing happened for Frazier around 8:45. I was not checking all the time so there may have been more instances and even better signals. I also had an interesting lesson this weekend in propagation over a hill. My station for working the repeater is not quite line-of-site and I have a slight obstruction by a hill between my station and the repeater. since I have installed the rooftop rig around Christmas time, the signals I received from the repeater have been slowly declining and increasing in variability with wind & such. This weekend I removed the rig from the roof and found the signals to be much improved at ground level. This led me to survey the possible roof locations for dead spots. I found that even though all locations tried had no visible difference in visibility to the hill between me & the repeater, there were many dB of difference in signal strength. I ended up moving the system about 8 feet due East on the roof which drastically improved the overall receive connection to the repeater. On another note - I will be giving an X-Band Repeater/ Qualcomm conversion presentation on Thursday March 6 at the SOBARS meeting in Chula Vista. - Kerry N6IZW

Predicting Tropo Openings From WX Balloons. Recently there have been some postings related to wx charts for predicting aurora and other openings. Subscribers may be interested in using the data generated from wx balloons to determine where the refractive or inversion layers are located for tropo openings. I have in the past used the landline to call the weather service to ask for pertinent details on their upper air soundings. This is useful information for determining the altitude and strength of ducting layers used in vhf through microwave propagation. Now all this data is available rapidly through the internet. Unfortunately though the balloons are only released twice a day. One of the sites for retrieving the plots is:
http://covis1.atmos.uiuc.edu:80/covis/visualizer/sounding_stuve.html. This will retrieve a map of over 80 sites in the US that may be clicked on to bring up a rapid plot called Stuve Thermodynamic diagram. This plot gives a vertical profile of temperature, humidity and winds aloft. The vertical coordinate is pressure. It is plotted on an inverse log scale. The horizontal coordinate is temperature. There are several auxiliary scales. The green lines are dry adiabats. Unsaturated air rising or descending in the atmosphere will tend to follow these lines. The blue dashed lines are saturation adiabats. Air rising in a cloud will tend to follow these lines. The red dashed lines are saturation mixing ratio. The scale for these lines are below the temperature scale. Mixing ratio is the number of grams of water vapor per kilograms of dry air. This quantity is generally conserved as a parcel ascends or descends in unsaturated air. The plots that readily show the inversion layers are with the heavy black lines. These show the temperature and dew point profiles, with dew point to the left of temperature. The wind direction and speed are plotted on the right side of the chart. The direction of the wind shaft indicates the direction that the wind is from at that level. The flags indicate the wind speed. A full barb is 10 knots, a half barb is 5 knots, and a flag is 50 knots. I am still a novice at using these plots, so please don't ask me for additional guidance. A good learning exercise is to study the plots after a particular good opening. The Temperature plot is probably the most useful. An abrupt change in the slope to the right where temperature rises with altitude is called an inversion and is a sure sign of a refractive layer. It is interesting to observe cloud formations visually and then check the stuve diagram for correlation. Have fun Jack N6XQ n6xq@ham-radio.com (Jack Henry)

Thu, 6 Mar 1997 Subject: FREE 6 Foot dish!--I have been contacted by a fellow ham, in San Francisco, who has available for free, to the first person claiming it, a 6 foot Andrew, solid dish. I don't know more than that... except

that it was in service within the City of San Francisco's communications system. My friend described the dish as in good condition and said it had a "handle" (?) on the back. I have no idea what he means. It is solid as in "not screened". He believes it is aluminum but is not sure. There is a "window" of opportunity, that is it's going to the dumps... and soon, so anyone who wants it must PICK IT UP ...and as I said SOON! E-mail me or telephone me if your interested. I will liaison. Pass the word to those not on the Stanford reflector if you think they might too be interested. 73's Al Ferrera WA6MXI aferrera@sprynet.com [707] 538-3801.... please no calls after 10:00 PM or before 9:00 AM.

Frequency Measurements- Bill, WA6QYR has been attempting to check two counters, an HP5245L and 5247M, to find out which one has the correct reference oscillator. Microwave plug-ins use multiples of the oscillator to set a "LO" against which they count the difference and display it on the counter readout. Chip, N6CA tells us that the Frazier Peak (DM04MS) beacon is 10,368,310.600 Hz. Chuck, WA6EXV could just hear the beacon above the noise level at the home QTH (DM15DP) in Ridgecrest with a 4 ft dish and sub 1 dB NF. Using a DSP program, SpectraPlus, he can view either the full 2 KHz bandwidth of the TS711 IF radio or narrow it down to 1 Hz bandwidth. The beacon is sometimes only 5 dB s/n in the mornings, but will climb to over 17 dB s/n which is fully audible. Bill put up a horn antenna and pointed it the 2 miles over to Chucks house. With additional line attenuation, Bill got his 10 Ghz transmit signal level down to that of the beacon as seen by Chuck. Chuck "walked" Bill's transmission on to the beacon frequency. Bill used the HP5247M counter with HP5255A (3-12 Ghz) plug-in to check frequency and learned that its oscillator was 4 Hz off at 5 Mhz. Bill used this "calibration" to check the other counters in the shack. Later this was checked against a Rubidium source on loan from K6OW and found the counter to have the same 4 hertz error. The feeds that Dave K6OW brought to last meeting are for high Ku band, 11.7-12.2, the feeds that Jack N6XQ had were low Ku band for the European birds 11.2-11.7, these should still work. 73's AL, K6LJM k6ljm@local.net

New email address for W6ASL is: jimw6asl@pacbell.net; for Phil Biles K6COY is philbiles@worldnet.att.net

Enter the "World Above 1000 MHz" at <http://members.aol.com/g3pho/ghz.htm>. Just updated with news of forthcoming microwave contests and meetings in the UK. Also new table of microwave DX records. News of new 24 GHz and 5.7 GHz beacons. New French 24 GHZ record and first G-F on 24 GHz. To come soon: A 'Short' History of 10 GHz 73 de Peter G3PHO @aol.com

San Diego Report for March 97 On March 15 the following San Diego area home stations were active on 10 GHz during the "Home-to-Home" Event. Kerry, N6IZW in La Mesa, Chuck, WB6IGP and Ed, W6OYJ in San Diego, John, WB6BKR in La Jolla, and Pete, W6DXJ in El Cajon. All except WB6BKR made QSOs with each other via the Mt. San Miguel "On Channel Active Repeater" (OCAR) using nbfm or SSB modes. WB6BKR worked W6OYJ via knife edge refraction over Mt. Soledad, or reflection from the assortment of TV and communications antennas on its summit. Frequent calls to the north were made on 10368.000 and 10368.100 as well as on the 144.310 and 144.330 liaison channels, but nobody outside the San Diego area was heard. W6OYJ reported the following signal strength comparisons of the stations he heard, compared to the WB6IGP Beacon on Mt. San Miguel (10368.035): N6IZW was (-)10 dB with his 0.5 watt roof mounted rig and +11 dB with his 10 watt field portable rig in his front yard with a clearer view of Miguel; WB6IGP was +15 dB with his 10 watt rig in his backyard and a clear view of Miguel; N6IZW reported that W6OYJ's signal was about +5 to +10 dB above the Beacon at his QTH.

The Microwave Group of San Diego will meet on March 17 at the N6IZW QTH. A workshop session will allow participants to calibrate their frequency standards (5 MHz, 10 MHz types) against a precision GPS-disciplined reference capable of 10E(-11) accuracy or better. submitted by Ed Munn, W6OYJ

ARRL PACIFIC DIVISION UPDATE APRIL, 1997 by Brad Wyatt, K6WR, Director, Pacific Division, ARRL (408) 395-2501 (Phone and FAX) Internet: K6WR@arrrl.org

NEW HAM RADIO VOLUNTEER SERVICES BILL:- During the week of March 9, Rep. Anna Eshoo (CA, 14th Dist.), along with 21 cosponsors, introduced the Amateur Radio Volunteer Services Act of 1997 (HR 1013) into Congress. This bill, if enacted, would place volunteers in the Volunteer Examination Program and the AmateurAuxiliary under the protections of the Federal Tort Claims Act by affording them the same legal

protections as employees of the Federal Government while they're carrying out such volunteer duties. Rep Eshoo, in her comments, stated that amateurs save the government time and money, and that it was unfair for the volunteers not to be provided with some element of legal protection while performing their volunteer services. The full text of the bill can be found in the Thomas section of the Library of Congress web site.

FCC Issues Amateur Spread Spectrum NPRM:- On March 9, 1997, the FCC issued a Notice of Proposed Rule Making (NPRM), WT Docket 97-12, proposing to make significant changes in the regulations governing Amateur Radio use of spread spectrum (SS) technology. The changes are proposed in order to encourage greater use of this mode, a mode that is expanding very rapidly in commercial circles, but hardly at all within the Amateur Radio community. This NPRM was in response to an ARRL petition submitted on Dec. 12, 1995. The text of the Docket can be found on the FCC web site at <http://www.fcc.gov/Bureaus/Wireless/Notices/1997/fcc97010>. Further details will be made available on the Pacific Division web site and to the Pacific Division alert teams. For those wishing to comment on this Docket, comments are due no later than May 5 1997, while reply comments are due no later than June 5.

ARRL WRC-99 Committee Proposes New Licensing Plan: One of the charges given to the ARRL WRC-99 Planning Committee by the ARRL Board of Directors early last year was to study the U.S. amateur licensing structure. A full discussion of the Committee's proposals related to the U.S. licensing structure is given in March QST at page 55. Please read it and offer your comments to ARRL and to me. My thanks to all of you who have written already. I have read each e-mail and hard copy letter and noted your thoughts. My goal is to respond to each of you in the Division who have written me directly. Please remember that this is just a proposal and there is no certainty that the ARRL Board will adopt this or any other proposal on this matter.

Further, it is not clear that the FCC is even interested in revising the Amateur Radio licensing and testing structure. In addition to the U.S. license restructuring matters, the WRC-99 Planning Committee of the ARRL Board was charged with the task of developing recommendations to be passed on to the U.S. Government delegation to WRC-99, dealing with potential changes in the International Telecommunications Union Rules governing the Amateur Service. This activity resulted in the survey published in QST last August, as well as an additional mail survey subjected to careful statistical controls. The results of this survey were published in QST for Jan., 1997.

Continuing Avalanche of New Antenna Ordinances:- There is a huge new wave of antenna ordinances being proposed by cities and counties. These ordinances are being driven by the spectrum purchases and by new and expanding Cellular and Personal Communications Services licenses.

Latest Band Threat News: 2m/1.25m/70 cm Band Threats:- At the Feb. 13 meeting of the IWG-2A, the Little LEO folks added a last minute request for the bands from 219-225 MHz. The Amateur Radio community responded with an avalanche of e-mail messages opposing the Little LEO flexible allocation plan. The IWG-2A committee offered its recommendations to the FCC's Industry Advisory Committee on March 5 - without the flexible allocation plan being in the main body of its report as a formal recommendation. This does not mean that we are out of the woods on this matter, for it's still being pushed by the Little LEO folks. However, the fact that the flexible allocation plan was not a part of the formal report from IWG-2A is gratifying just the same. Additional details can be found in the ARRL Letter for March 7, 1997.

2300-2310 MHz Band Threat:- The FCC issued a Report and Order on Feb. 19, 1997, on this matter. The FCC created the Wireless Communications Service (WCS) and a new Part 27 to the FCC rules. They also changed Part 97. In summary, we retained the secondary allocation from 2300 - 2310 MHz. Instead of the Federal Government, the new primary allocation at 2305-2310 MHz. is WCS - yet to be developed. There is no primary allocation in the U. S. at 2300-2305 MHz. Please also note that this Report and Order does NOT include any action on the ARRL petition submitted to elevate our status to primary in 2300-2305 MHz. That petition is still pending. See Jan. QST, p. 16; Feb. QST, p. 16 and the ARRL web site.

73's Bill

Back to the [SBMS Home Page](#).